

precise step and at best makes reference to steps in conjunction with manufacturing the first layer (corresponding to FIGs. 1A to 1C). Kiyoku specifically teaches that built up layers are made in the same fashion as the simpler construction. As the simpler construction does not teach the claimed steps, nor can the built up construction teach the now claimed steps.

In fact, the description related to Kiyoku's methods only involve a description of the growth of the crystal layers to suppress the nitride semiconductor in the vertical direction and force lateral growth (col. 14, lines 50-52). Obviously examining FIGs. 6A-6C does not divulge the method in which the built up layered structure is made. It must be remembered that simply because the structure of FIG. 6 may be similar to the resulting invention does not mean it was made in the claimed manner. The current invention uses method claims, not apparatus claims. The discussion related to Fig. 6 gives no guidance to revealing the unmet claim limitation.

Sugiura is no better. In fact, even the structures shown in Sugiura does not reveal the methods in which the structure is made. It does not show a second mask layer at all. Although the examiner asserts that part of the second mask must be removed implicitly from the discussion, no second mask is even present so that part of it could be removed. This element would still be missing from any combination. This alone means that despite any combination, the element would still be missing.

There is also no motivation to combine the reference as they are related to different problems and solutions. The very expressed problem of Kiyoku is to grow layers and suppress crystal defects by using different nitride layers. The solution in Kiyoku has nothing to do with, nor does Kiyoku appreciate, that crystal dislocation can be minimized by the processing steps and the unique formation of windows and masks. The expressed problem of Sugiura is to reduce dislocations but the solution is to grow laterally and stably. Again, the only quoted section (col. 18, lines 9-35) from Sugiara that is relevant is:

That region of the multi-layer structure which is not used for the constitution of the laser is removed, by the use of the dry etching method, as far as the n-type GaN contact layer 84 is reached; and thereafter, an SiO.sub.2 film 91 is formed to a thickness of 50 nm by the use of the CVD method using oxygen and disilane as feed gases. Subsequently, a resist suitable for electron beam exposure is applied, and, only in those portions of the resist which have been removed by dry etching, a pattern of lines each having a width of 50 nm is formed, by the use of the electron beam exposure method, in the shape of stripes disposed at intervals of 420 nm. By use of this resist as a mask, the SiO.sub.2 film 91 is etched by the use of ammonium fluoride, whereby an SiO.sub.2 mask 91 having linear grooves (opening portions) 91a is formed. As a result, the GaN contact layer 84 is exposed in the grooves 91a.

After this, the substrate under treatment is transferred into the MOCVD apparatus again, an undoped GaN layer 92 is re-grown to a thickness of 100 nm. This GaN layer 92 is used as a laser beam wave guide. The portion where it is not necessary to form a wave guide, which is covered by a mask while the above growth, is removed by dry etching again after the growth. The end region of the interface between the n-type GaN layer 84 and the n-type AlGaIn layer 85 is etched, and, in this region, an n-side electrode 93 is formed, and, on the p-type GaN layer 90, a p-type electrode 94 is formed.

This section utterly fails to describe that the now claimed method. Nothing suggests that a second mask is removed and when in the method order that mask is removed. The examiner asserts that it is implicitly there, but upon closer review it is not. It is incumbent on the Examiner to assert a technical fact not mere hypotheses. Alternatively, in accordance with 37 C.F.R. § 1.104 ¶ (d)(2) and to preserve Applicant's argument on appeal, Applicant requests that the Examiner provide an affidavit that supports the rejection of the claims based on the personal knowledge of the Examiner. See In re Lee, 277 F.3d 13338, 1344-45, 61 USPQ2d 1430, 1435 (Fed. Cir. 2002) (finding that reliance on "common knowledge and common sense" did not fulfill the PTO's obligation to cite references to support its conclusions as PTO must document its reasonings on the record to allow accountability and effective appellate review.) Here, the Examiner is asserting a hypothesis to be fact and thus to rebut the "fact" the record must be clear.

In addition, in this case, the problem identified by the prior art is directed to a different problem identified by the instant invention. In addition, the prior art solution identified to the prior art problem is different than the solution provided here. Accordingly, In Re Dembiczak

counsels that where the problems and solutions are different, this is strong evidence of non-obviousness because the ordinary artisan when confronted with the instant problem would not look to the prior art for a solution because that solution is different and deals with a different problem. The showing of a motivation to combine must be clear and particular, and it must be supported by actual evidence. In re Dembiczak, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999):

Our case law makes clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references. See, e.g., C.R. Bard, Inc. v. M3 Sys., Inc., 157 F.3d 1340, 1352, 48 USPQ2d 1225, 1232 (Fed. Cir. 1998) (describing "teaching or suggestion or motivation [to combine]" as an "essential evidentiary component of an obviousness holding"); In re Rouffet, 149 F.3d 1350, 1359, 47 USPQ2d 1453, 1459 (Fed. Cir. 1998) ("the Board must identify specifically . . . the reasons one of ordinary skill in the art would have been motivated to select the references and combine them"); In re Fritch, 972 F.2d 1260, 1265, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992) (examiner can satisfy burden of obviousness in light of combination "only by showing some objective teaching [leading to the combination]"); In re Fine, 837 F.2d 1071, 1075, 5 USPQ2d 1596, 1600 (Fed. Cir. 1988) (evidence of teaching or suggestion "essential" to avoid hindsight); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 297, 227 USPQ 657, 667 (Fed. Cir. 1985) (district court's conclusion of obviousness was error when it "did not elucidate any factual teachings, suggestions or incentives from this prior art that showed the propriety of combination"). See also Graham, 383 U.S. at 18, 148 USPQ at 467 ("strict observance" of factual predicates to obviousness conclusion required). Combining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability--the essence of hindsight. See, e.g., Interconnect Planning Corp. v. Feil, 774 F.2d 1132, 1138, 227 USPQ 543, 547 (Fed. Cir. 1985) ("The invention must be viewed not with the blueprint drawn by the inventor, but in the state of the art that existed at the time."). In this case, the Board fell into the hindsight trap.

We have noted that evidence of a suggestion, teaching, or motivation to combine may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, from the nature of the problem to be solved, see Pro-Mold & Tool Co. v. Great Lakes Plastics, Inc., 75 F.3d 1568, 1573, 37 USPQ2d 1626, 1630 (Fed. Cir. 1996), Para-Ordinance Mfg. v. SGS Imports Intern., Inc., 73 F.3d 1085, 1088, 37 USPQ2d 1237, 1240 (Fed. Cir. 1995), although "the suggestion more often comes from the teachings of the pertinent references," Rouffet, 149 F.3d at 1355, 47 USPQ2d at 1456.

While the Examiner asserts that a motivation would be present because of processing ease, there is absolutely no technical evidence that shows that the processes could be combined

and still yield a workable resulting process. Again, the hypothesis is that the combination provides for flexible processing but there are no technical reasons or evidence to support such a claim. Accordingly, any affidavit should also include a discussion of the general processing steps known in the industry and why this combination would yield a workable results. It must be remembered that merely because two references conceivably could be combined does not at all mean that they can be combined and still work.

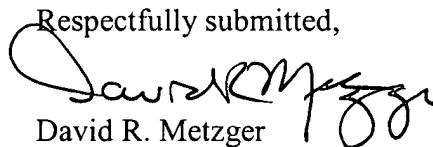
Finally, the applicants note that the Examiner failed to establish a prima facie case regarding each claim. Examining the Final Office Action in close scrutiny, the Action only parallels the elements of claims 3, 5, 7, 8, 10, 12, 13, and 14. There is absolutely no discussion involving claims 4, 9, 11, and 15 (as 15 is independent). These claims must stand allowed.

Conclusion

The applicant respectfully requests withdrawal of the rejections and believes that the claims as presented represent allowable subject matter. But if the Examiner desires, the applicant is ready for a telephone interview to expedite prosecution. As always, the Examiner is free to call the undersigned at 312-876-2578.

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Respectfully submitted,

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